

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN

JAMES E. BLAU #214995,

Plaintiff,

v

No. 2:16-cv-13971

ANGELA FORTESCUE, HEIDI
WASHINGTON & JOHN DOE, in
their individual & official
capacity,

HON. ARTHUR J. TARNOW

MAG. ELIZABETH A. STAFFORD

Defendants.

James E. Blau #214995
In Pro Per
Lakeland Correctional Facility
141 First Street
Coldwater, MI 49036

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EXHIBIT A: Dr. Alaimo's Expert Report

February 11, 2019

Eric M. Jamison, Assistant Attorney General
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Regarding: *Blau v. Fortescue et al.*, USDC-ED#2:16-CV-13971

Introduction:

My name is Katherine Alaimo and I am an Associate Professor in Department of Food Science and Human Nutrition at Michigan State University. I have a BS with Honors, MS, and PhD degrees from Cornell University in Nutritional Sciences. My research areas are improving school nutrition education and meals, food insecurity and hunger in the U.S., and urban agriculture. Since 2004, I have been the course coordinator and instructor for MSU's Introduction to Human Nutrition Course. I started my career as a nutritionist for the National Center for Health Statistics, CDC, where I was responsible for cleaning and analyzing 24-hour dietary recall data and food insufficiency data. For the past 10 years, I have worked on school nutrition projects including collecting and analyzing data on meal, a la carte and vending food items from over 75 elementary and middle schools in Michigan. I am familiar by my education, training and experience with analyzing institutional meal service data as appropriate for this case.

Purpose of Review:

The purpose of this report is to review the diet of prisoner Mr. Blau to determine whether his diet is consistent with the discharge instructions of: (1) sodium 2000mg, no caffeine, low cholesterol, and low fat; and (2) low cholesterol, low fat, vegan diet. This review includes items purchased from the prison store.

Documents Reviewed:

- Trinity Services Group Average Cycle Nutrition Analysis By Diet: MDOC Vegan 2gm Low Fat Chol – Weeks 1-4 Daily and Weekly Summaries
- NetMenu Detailed Menu Cycle Nutritional Analysis for MDOC Vegan 2gm Low Fat Chol Days 1-28
- MDOC 2018 Cycle 1 Menus, Recipes, and Ingredients for Vegan, 2gm Na+, Low fat/Cholesterol
- Addition from internet: Jiffy Basic Muffin Mix ingredients and nutrition analysis
- MDOC 2018 Cycles 2-4 Menus (Only), Vegan, 2gm Na+, Low fat/Cholesterol
- Mr. Blau Store Orders and Refunds 6/1/17 – 10/9/18
- Photographs with nutrition facts labels for Mr. Blau's store orders
- Letter sent to me from Mr. Blau, December 23, 2018

- Institute of Medicine (US) Committee on Examination of Front-of-Package Nutrition Rating Systems and Symbols; Editors: Ellen A. Wartella, Alice H. Lichtenstein, and Caitlin S. Boon. Appendix BFDA Regulatory Requirements for Nutrient Content Claims, Washington (DC): National Academies Press (US); 2010.
- Ornish, et al. Intensive Lifestyle Changes for Reversal of Coronary Heart Disease. *JAMA*. 1998;280:2001-2007

Facts of the Case:

After diagnosis with coronary artery disease, Mr. Blau received discharge instructions from medical professionals for his diet. I have been provided with menus, recipes and nutritional analysis of the foods that Mr. Blau is offered in the prison. In addition, I have received his store orders and photographs of the foods he purchased that include ingredients and nutrition facts labels.

Definitions:

Low fat

In 1993, the Food and Drug Administration and US Department of Agriculture published final rules defining nutrient content claims including a definition of “low fat”. For meals and main dishes, Low fat is defined as “3 g or less per 100 g and not more than 30% of calories from fat”. (Institute of Medicine (US) Committee on Examination of Front-of-Package Nutrition Rating Systems and Symbols; Editors: Ellen A. Wartella, Alice H. Lichtenstein, and Caitlin S. Boon. **Appendix BFDA Regulatory Requirements for Nutrient Content Claims**, Washington (DC): National Academies Press (US); 2010; <https://www.ncbi.nlm.nih.gov/books/NBK209851/>).

However, less than 30% of kilocalories is not the only definition of low fat. For example, three studies have used lower % fat diets to reverse heart disease:

- 1) in the randomized controlled Lifestyle Heart Trial conducted by Ornish, et al., lifestyle changes for five years consisting of a diet of 10% of kilocalories from fat, aerobic exercise, stress management training, smoking cessation and group psychosocial support led to a regression of coronary atherosclerosis as measured by arterial stenosis whereas the control group increased arterial stenosis (Ornish, et al. Intensive Lifestyle Changes for Reversal of Coronary Heart Disease. *JAMA*. 1998;280:2001-2007; <https://www.ncbi.nlm.nih.gov/pubmed/9863851>);
- 2) a study conducted by Esselstyn et al. in which patients were asked to adhere to a diet that derived less than 10% of its kilocalories from fat and take lipid lowering drugs found that arterial stenosis decreased on average by 7% in the patients followed for 5.5 years (Esselstyn CB, et al. A strategy to arrest and reverse coronary artery disease: a 5-year longitudinal study of a single physician's practice. *J Fam Pract*. 1995 Dec;41(6):560-8. <https://www.ncbi.nlm.nih.gov/pubmed/7500065>);
- 3) a study conducted Roberts et al. placed obese men on a high-fiber, 12-15% fat diet with daily aerobic exercise in a 3-wk residential program and found significant reductions in body mass index, all serum lipids and lipid ratios, as well as blood markers for cardiac inflammation (Roberts CK, et al. Effect of a short-term diet and exercise intervention on oxidative stress, inflammation, MMP-9, and monocyte chemotactic activity in men with

metabolic syndrome factors. J Appl Physiol (1985). 2006 May;100(5):1657-65. Epub 2005 Dec 15 <https://www.ncbi.nlm.nih.gov/pubmed/16357066>).

Vegan

A vegan diet is a diet that includes only plant-based foods and excludes animal-based foods including eggs, dairy, meat, fish and honey.

Low cholesterol

Because cholesterol is found only in animal foods, if a diet is vegan, then it will by definition contain 0 mg cholesterol.

Sodium 2000 mg

The diet should contain less than 2000 mg sodium each day.

No caffeine

The diet should contain 0 mg caffeine each day.

My Opinions are as Follows:

Assessment of Content of MDOC Vegan 2gm Low Fat Chol Diet Menu Meals

Using a diet analysis software, I analyzed the MDOC 2018 Cycle 1 Menus and Recipes, Vegan, 2gm Na+, Low fat/Cholesterol and reviewed the MDOC 2018 Cycles 2-4 Menus Only, Vegan, 2gm Na+, Low fat/Cholesterol. I compared my findings to the NetMenu Detailed Menu Cycle Nutritional Analysis for MDOC Vegan 2gm Low Fat Chol Days 1-28 provided to me. My analysis and the MDOC analysis were reasonably comparable.

Vegan and Low cholesterol

No animal products were used in the MDOC 2018 Vegan, 2gm Na+, Low fat/Cholesterol Cycle 1 menus and recipes provided to me. On visual inspection of the foods offered during Cycles 2-4 of the MDOC 2018 Vegan, 2gm Na+, Low fat/Cholesterol menu, it does not appear that animal products are used in any of the food items offered. The nutrition facts panel provided to me for one of the textured soy protein products, Sunshine Brand Meatless Mixes TVP Crumbles contains 10 mg cholesterol per serving. This does not make sense to me because the ingredients are soy flour and artificial color, and I believe it is likely a mistake. Therefore, I concur that all menus are vegan and contain zero cholesterol.

Sodium < 2000mg

All menu days of MDOC 2018 Vegan, 2gm Na+, Low fat/Cholesterol Cycles 1-4 menus provide less than 2000 mg sodium. For Cycle 1, the sodium content of the meals ranged from 1221 to 1635 mg per day.

No caffeine

All menu days of MDOC 2018 Vegan, 2gm Na+, Low fat/Cholesterol Cycles 1-4 menus provide 0 mg caffeine.

Low fat

My nutrition analyses of each day of the Cycle 1 menu/recipes came out to be very similar to what was provided to me by MDOC. The daily totals ranged from 14% of kilocalories from fat to 25% of kilocalories from fat (Day 1: 25%, Day 2: 20%; Day 3: 24%; Day 4: 25%, Day 5: 15%; Day 6: 14%; Day 7: 25%). Using the FDA low fat definition of less than 30% kilocalories from fat, the MDOC 2018 Vegan, 2gm Na+, Low fat/Cholesterol Cycles 1-4 menus meets the recommendation. Using the evidence-based heart healthy diet prescription of 10% of kilocalories from fat as outlined in The Lifestyle Heart Trial conducted by Ornish, et al., the MDOC menus do not meet the low fat recommendation.

Notes:

1. In addition to lowering fat and cholesterol in one's diet, is also important for heart health that diets be low in saturated and trans fat. The Week 1 menu days were very low in trans fat, but ranged from 5% to 8% of kilocalories from saturated fat. The majority of saturated fat in the menu came from the coconut oil in the Vegan Morning Beverage. When prescribing a vegan diet, it is important to take care to provide adequate vitamin B12, calcium, and vitamin D in the diet, and the Vegan Morning Beverage fulfills this important role in Mr. Blau's diet, as well as providing adequate amounts of other important nutrition. I would like to note that if this important diet component is reduced in Mr. Blau's meals, it is very important to replace it with a similarly fortified food or beverage.

2. In his letter to me, Mr. Blau stated that "ALL vegetables, rice, pasta, potatoes, sauces, and gravies are cooked in margarine and/or oils not accounted for on menus or nutritional analysis charts. The amounts depend solely on how many pounds the cook dumps into the pot". I would like to note that my nutritional analysis only includes the MDOC menus provided to me; I was not given any information regarding amount of fat, cholesterol, salt or caffeine added during meal preparation.

Assessment of Content Of Mr. Blau's Store Orders Food Purchases

Using a diet analysis software, I analyzed the kilocalorie, total fat, saturated fat, trans fat, cholesterol and sodium content of the food items that Mr. Blau ordered from 12/10/17 to 9/30/18. Overall, the majority of food items that Mr. Blau purchased did not align with his diet recommendations. These include high fat and high sodium snack foods such as potato chips and cookies, high sodium condiments such as soy sauce and barbeque sauce, and high fat and sodium meal items such chili with beans. Some good choices that Mr. Blau purchased were brown rice, canned beans, and vegetables.

I was not provided information as to whether or not Mr. Blau consumed the food items he ordered or when. Making the assumption that Mr. Blau ate the foods he ordered over a series of days and not all on the day he received them, a useful analysis is the average nutrient content of the foods ordered over the 301 days the orders cover. The following chart details my findings:

Chart 1: Average daily nutrient content of Mr. Blau's store orders

STORE ORDER DATE	Kilocalories	Fat (g)	% Kilocalories from Fat	Saturated fat (g)	% Kcals from Sat fat	Trans fat (g)	Chol (mg)	Sodium (mg)
12/10/2017	10281	481	42%	84.1	7%	0	210	18118
12/24/2017	7360	300	37%	108	13%	0	0	3480
1/7/2018	8100	319	35%	48.5	5%	0	0	7760
1/21/2018	40601	1867	41%	612.4	14%	0	950	76115
2/4/2018	8720	379	39%	69	7%	0	0	31248
2/18/2018	130	2	14%	1	7%	0	0	90
3/4/2018	9160	356	35%	75.1	7%	0	0	17260
3/18/2018	5080	290	51%	45	8%	0	0	7790
4/8/2018	60	0	0%	0	0%	0	0	11988
4/15/2018	580	8	12%	4	6%	0	0	12348
4/29/2018	6330	175	25%	31.5	4%	0	0	9350
5/13/2018	3040	45	13%	15	4%	0	0	7480
5/27/2018	2320	208	81%	32	12%	0	0	2320
6/10/2018	1246	12	9%	2.7	2%	0	0	258
7/10/2018	2210	20	8%	8	3%	0	0	6120
7/22/2018	3630	30	7%	4.5	1%	0	0	9800
8/5/2018	7380	76	9%	33.5	4%	0	0	24150
8/19/2018	5580	272	44%	40	6%	0	0	2960
9/2/2018	8290	280	30%	46	5%	0	0	15560
9/16/2018	7320	296	36%	52.5	6%	0	0	10945
9/30/2018	5630	270	43%	45	7%	0	0	3430
DAILY AVERAGE (~ 301 DAYS)	475	19	36%	4.5	9%	0	4	925

Vegan and cholesterol free

Four items that Mr. Blau ordered were not vegan and contained cholesterol: Spicy Jalepeno Cheese Spread which contains 30 mg cholesterol/serving ordered on 12/10/17 and 1/21/18, Brushy Creek Chili with Beans which contains 22 mg cholesterol/serving ordered on 1/21/18 and Brush Creek Summer Sausage which contains 50 mg cholesterol/serving.

Low fat

If eaten over 301 days, the foods Mr. Blau ordered from the store provided a daily average of 475 kilocalories, 19 grams of fat, 4.5 grams of saturated fat. The ordered store foods were on average 36% of kilocalories from fat and 9% of kilocalories from saturated fat, which exceeds the FDA definition of low fat on certain days, and exceeds the Lifestyle Heart Trial definition of low fat on all days. All food items ordered were trans fat free. Depending on which MDOC cycle daily menu meals were consumed (Cycle 1 average menu kilocalories = 2476; average fat = 60 g; a range of 14-25% of kilocalories from fat) and which store purchases were consumed on which day (a range of 0 to 81% of kilocalories from fat), the average amount of fat in Mr. Blau's diet could have ranged from 14% to 34% per day, which exceeds the FDA definition of low fat on certain days, and exceeds the Lifestyle Heart Trial definition of low fat on all days.

Low sodium

If eaten over 301 days, the foods Mr. Blau ordered from the store provided on a daily average 925 mg of sodium. This is an additional amount of sodium to the 1221 to 1635 mg per day (average 1471 mg) provided by Mr. Blau's MDOC meals, and the combination $1471 + 925 \text{ mg} = 2396 \text{ mg}$ exceeds 2000mg.

Caffeine content

Three foods ordered by Mr. Blau may have contained caffeine. Mr. Blau ordered black and/or green tea bags on 1/7/18, 1/21/18, 2/4/18, 3/18/18, 4/15/18, 4/29/18, 5/13/18, 5/27/18, 6/24/18, 7/8/18, 7/22/18, and 8/5/18. In addition, Mr. Blau ordered "100% Columbian Freez" by which I interpret to be freeze dried coffee on 1/21/18, 2/4/18, 2/18/18, 3/4/18, 3/18/18, 4/1/18, 4/15/18, 5/13/18, 6/10/18, 6/24/18, 7/8/18, 7/22/18, 8/19/18, 9/16/18, and 9/30/18. I was not provided a photograph of the green tea or coffee so it is possible that they were decaffeinated, but from the photograph of the Keefe tea, it appears to be caffeinated. Depending on steep time, a cup of black tea contains ~50 mg caffeine, a cup of green tea contains ~35 mg caffeine, and a cup of instant coffee contains ~50 mg caffeine.

Compensation:

I am being compensated at the rate of \$200.00 per hour, and expenses. A research assistant, Emilia Ledda, is being compensated at the rate of \$20.00 per hour.

Sincerely yours,



Katherine Alaimo, MS, PhD
Associate Professor, Department of Food Science and Human Nutrition
Michigan State University